## PATENT COOPERATION TREATY

# **PCT**

# TRANSLATION INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 42 309.%nb	FOR FURTHER ACTION	ON	See Form PCT/IPEA/416								
International application No.	International filing date (da	y/month/year)	Priority date (day/month/year)								
PCT/EP2004/012782	11.11.2004		16.12.2003								
International Patent Classification (IPC) or	national classification and IPC										
B21B31/07, F16J15/34, F16J15/447											
Applicant											
SMS DEMAG AG											
<ol> <li>This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</li> </ol>											
This REPORT consists of a total of a to			this cover sheet.								
3. This report is also accompanied by	•										
a. (sent to the applicant of	and to the International Bureau)	a total of 4	sheets, as follows:								
			nended and are the basis for this report and/or								
sheets containing Instructions).	rectifications authorized by thi	s Authority (see Rule	e 70.16 and Section 607 of the Administrative								
l l · · · · · · · ·		•	ders contain an amendment that goes beyond n item 4 of Box No. I and the Supplemental								
	ID IN A LOCATION										
b (sent to the Internation	nal Bureau only) a total of (indic	ate type and number	of electronic carrier(s))								
related thereto in comp	utar randahla farm anly as indi		, containing a sequence listing and/or tables								
Section 802 of the Admi	•	cated in the Supplem	nental Box Relating to Sequence Listing (see								
4. This report contains indications re	lating to the following items:										
Box No. I Basis of	the report										
Box No. II Priority											
Box No. III Non-est:	ablishment of opinion with regar	d to novelty, inventiv	e step and industrial applicability								
Box No. IV Lack of	unity of invention										
Box No. VI Certain	documents cited										
Box No. VII Certain defects in the international application											
Box No. VIII Certain	VIII Certain observations on the international application										
Date of submission of the demand Date of completion of this report											
		1	•								
Name and mailing address of the IPEA/EP	Auth	orized officer									
Facsimile No	Teler	Felephone No.									

International application No.

PCT/EP2004/012782

Box	No. I	Basis of the report						
1.		h regard to the language, this report is based on the internatio cated under this item.	nal application in the language in	which it	was filed, unless otherwise			
		This report is based on translations from the original langua which is the language of a translation furnished for the purp international search (Rule 12.3 and 23.1(b))	oses of:		·			
		publication of the international application (Rule 12.4 international preliminary examination (Rule 55.2 and						
2.	rece	h regard to the <b>elements</b> of the international application, this <i>viving Office in response to an invitation under Article 14 an report)</i> :  the international application as originally filed/furnished the description:	report is based on (replacement s					
		pages _ <b>2-5</b>			as originally filed/furnished			
		pages* 1,1a	received by this Authority on		2005 with letter 5.11.2005			
		pages*	received by this Authority on					
	$\boxtimes$	the claims:						
		nos.			as originally filed/furnished			
		nos.*	as amended (togethe	r with an	y statement) under Article 19			
		nos.* _ 1-5	received by this Authority on		2005 with letter 5.11.2005			
		nos.*	received by this Authority on					
	$\boxtimes$	the drawings:						
		sheets _ 1/1			as originally filed/furnished			
		sheets*	received by this Authority on					
		sheets*	received by this Authority on					
		a sequence listing and/or any related table(s) – see Supplem	nental Box Relating to Sequence L	isting.				
3.		The amendments have resulted in the cancellation of:						
		the description, pages						
		the claims, nos.						
		the sequence listing (specify):						
4.		This report has been established as if (some of) the amend they have been considered to go beyond the disclosure as fi	lments annexed to this report and	listed be	elow had not been made, since			
		the description, pages						
		the claims, nos.						
		the drawings, sheets/figs						
		the sequence listing (specify):						
		any table(s) related to sequence listing (specify):						
*	If ite	em 4 applies, some or all of those sheets may be marked "sup	erseded."					

International application No.
PCT/EP2004/012782

Вох			ticle 35(2) with regard to novelty, inventive step or industrial applicability; oporting such statement	
1.	Statement			
	Novelty (N)	Claims	1-5	YES
		Claims		_ NO
	Inventive step (IS)	Claims	1-5	_ YES
		Claims		_ NO
	Industrial applicability (IA)	Claims	1-5	YES
		Claims		_ NO

2. Citations and explanations (Rule 70.7)

This report makes reference to the following documents:

- D1: US-B1-6 217 219 (HOETING STEPHEN C), 17 April 2001 (2001-04-17)
- D2: DE 296 20 018 U1 (KARK, UWE, 21149 HAMBURG, DE), 8
  January 1998 (1998-01-08)

Document D2 is considered to constitute the prior art closest to the subject matter of claim 1 and discloses (the references in parentheses are to that document):

1. a roll bearing sealing device with a pin seal (9) arranged upstream of an annular seal (10) on the side of the roll barrel, the annular seal (14) being fixed to an annular flange (10) of the bearing housing (7) and its sealing lip contacting in a sealing manner the front side (4) of the roll (3), the first branch (15) of an annular profile (15) having an L-shaped cross-section being fixed to the front side (4) of the roll (3), the sealing lip lying on portions of the first branch (16), while the second branch (18) of the L-shaped annular profile (15) encloses the annular seal (14) and portions of the annular flange (10) with a small intermediate gap (see

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

page 4, lines 1-6), sealing them from the roll barrel, and at least the portion (16) of the first branch (15) in contact with the sealing lip is hardened (see page 3, last paragraph).

The subject matter of claim 1 therefore differs from the known roll bearing sealing device in that

- (a) the second branch of the L-shaped annular profile **surrounds** portions of the annular flange with a small intermediate gap,
- (b) the annular flange has on its outer side an outwardly open draining groove.

The subject matter of claim 1 is thus novel (PCT Article 33(2)).

The present invention can therefore be considered to address the problem of further improving the operating properties of the known type of roll bearing sealing device.

Although document D1 describes (column 8, lines 29-34) the same advantages of the second differentiating feature as the present application, a person skilled in the art would not consider the inclusion of both features in the roll bearing sealing device described in D2 a conventional measure for solving the stated problem, for structural reasons.

Claims 2-5 are dependent on claim 1 and thus also meet the PCT novelty and inventive step requirements.

International application No.
PCT/EP2004/012782

#### Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Independent claim 1 has not been drafted in the two-part form defined by PCT Rule 6.3(b). However, in the present case the two-part form would appear to be appropriate. Accordingly, the features known in combination from the prior art (D2) should have been placed in the preamble (PCT Rule 6.3(b)(i)) and the remaining features specified in the characterising part (PCT Rule 6.3(b)(ii)).